Proposed Report[1]

CECW-PC (1105-2-10a)

SUBJECT: West Onslow Beach and New River Inlet (Topsail Beach), North Carolina

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on coastal storm damage reduction along the Atlantic Ocean shoreline of West Onslow Beach and New River Inlet (Topsail Beach), North Carolina. It is accompanied by the reports of the district and division engineers. These reports were prepared under the authority of Section 101 of the Water Resources Development Act (WRDA) of 1992, which authorized the West Onslow and New River Inlet, North Carolina, project at a total cost of $14,100,000, with an estimated Federal cost of $7,600,000 and an estimated non-Federal cost of $6,500,000. The project cooperation agreement for the original project was not executed and the project was not constructed. Following major hurricanes in 1996 and 1999, the Town of Topsail Beach, North Carolina requested the reevaluation and implementation of the project.

2. The reporting officers recommend modifying the project authorization to reduce coastal storm damages by constructing a berm and dune along the Topsail Beach shoreline. The recommended plan includes a 26,200-foot-long dune and berm system, with a dune to be constructed to an elevation of 12 feet National Geodetic Vertical Datum (NGVD) and 50-foot-wide berm to be constructed to an elevation of 7 feet NGVD, including a 2,000-foot-long transition on the north end and a 1,000-foot-long transition on the south end. The recommended plan also includes periodic nourishment, accomplished via twelve 4-year renourishment intervals. Other features of the project include dune vegetation and construction of 23 dune walkover structures, post-construction monitoring, and adaptive management measures over the life of the project to adjust renourishment plans as needed to ensure project performance. The recommended plan is designed to avoid and minimize adverse environmental effects such that no compensatory mitigation is required. The recommended plan is the locally preferred plan for coastal storm damage reduction. The locally preferred plan is smaller that the national economic development plan, but larger than another more cost effective plan. Compared to the more cost effective plan, the dune and berm in the locally preferred plan add a 400-foot extension. All features are located in North Carolina.

3. The concepts of the *TWELVE ACTIONS FOR CHANGE,* released by the Chief of Engineers in 2007, have been fully integrated into the recommended plan. From inception of the reevaluation, the district has implemented a comprehensive systems approach with full stakeholder participation. The study included an integrated analysis of the Topsail Beach shoreline system and cumulative environmental effects. A statistical, risk-based model was used to formulate and evaluate the project. The study report describes risks to be anticipated such as residual coastal storm damages, risks that will not be reduced such as sound-side flooding and wind damage, and the risks of loss of life warranting evacuation of the town prior to hurricane impact. The project contains adaptive management measures. Borrow area contingency plans

[1] This report contains the proposed recommendation of the Chief of Engineers. The recommendation is subject to change to reflect Washington-level review and comments from Federal and State agencies

will ensure the suitability of material and an annual project monitoring program to reevaluate and adjust the renourishment actions will ensure project performance.

4. The estimated total initial construction cost of the recommended plan is $32,100,000, including $273,000 for the 400-foot extension, based on October 2007 price levels. In accordance with Section 103 of WRDA 1986, as amended by Section 215 of WRDA 1999, cost sharing for initial construction will be 65 percent Federal and 35 percent non-Federal, and cost sharing for periodic nourishment will be 50 percent Federal and 50 percent non-Federal. The Federal share is limited to the Federal cost share of the smaller, more cost effective plan and the non-Federal share will include the incremental cost of the extension. The estimated Federal share of the total initial construction cost is $20,700,000 (64 percent), and the estimated non-Federal share is $11,400,000 (36 percent). The cost of lands, easements, rights-of-way, relocations, and dredged or excavated material disposal areas (LERRD) is estimated at $1,400,000. The Town of Topsail Beach is the non-Federal cost-sharing sponsor for all features. The Town of Topsail Beach would be responsible for the operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) of the project after construction, a cost estimated at $21,000 per year.

5. Total periodic nourishment costs are estimated to be $110,400,000 over the 50-year period following initiation of construction. The ultimate project cost, including initial construction and periodic nourishment, is estimated to be $142,500,000. The equivalent annual cost of future periodic nourishment is estimated to be $2,300,000 based on a Federal discount rate of 4.875 percent and a 50-year period of analysis. The estimated cost for each renourishment is $9,200,000. The estimated Federal share of each renourishment cost is $4,600,000 (50 percent), and the estimated non-Federal share is $4,600,000 (50 percent). The estimated annual monitoring cost is $240,000. The estimated Federal share of annual monitoring costs is $120,000 (50 percent), and the estimated non-Federal share is $120,000 (50 percent).

6. Based on a 4.875-percent discount rate and a 50-year period of analysis, the total equivalent average annual cost of the recommended plan is $4,100,000, including renourishment, monitoring, and OMRR&R. All project costs are for coastal storm damage reduction. The selected plan would reduce average annual coastal storm damages by about 84 percent and would leave average annual residual damages estimated at $1,500,000. The equivalent average annual benefits are estimated to be $13,600,000 with net average annual benefits of $9,500,000. The benefit-to-cost ratio is approximately 3.3 to 1.

7. I concur in the findings, conclusions, and recommendations of the reporting officers. The plan developed is technically sound, economically justified, and environmentally and socially acceptable. The plan conforms to essential elements of the U.S. Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies and complies with other administrative and legislative policies and guidelines. Also, the views of interested parties, including Federal, State, and local agencies have been considered. Accordingly, I recommend that the plan described herein be authorized, with such modifications as in the discretion of the Chief of Engineers may be advisable. My recommendation is subject to cost sharing, financing, and other applicable requirements of Federal and State laws and policies, including Section 103 of WRDA 1986, as amended by

Section 215 of WRDA 1999. This recommendation is subject to the non-Federal sponsor agreeing to comply with all applicable Federal laws and policies.

8. The recommendation contained herein reflects the information available at this time and current departmental policies governing formulation of individual projects. It does not reflect program and budgeting priorities inherent in the formulation of a national civil works construction program or the perspective of higher review levels within the executive branch. Consequently, the recommendation may be modified before it is transmitted to the Congress as a proposal for authorization and implementation funding. However, prior to transmittal to Congress, the sponsor, the State, interested Federal agencies, and other parties will be advised of any significant modifications and will be afforded an opportunity to comment further.

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Chief of Engineers